

Engineering Weekly Report 1/29/2026 - 2/5/2026

<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2026/>

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Fixed laser range finder
 - 902106 - Niobicon-Based AUV Docking Development
 - Working on new cable
 - Project management
- Danelle Cline
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - ~8K video files processed from 2018-2020 for data mining through k3.
 - Added VARS media tap loader to unify downloads with [aidata](#)
 - 901221 - Midwater Time Series
 - Outlined three general workflows; discussed combined use of Tator+[Voxel51](#) to quickly preview results
 - 901502 - Ocean Soundscape
 - STM (Sound Topic Model) bug fix for misaligned documents
 - CSUMB student review
 - Starting evaluation of Whisper model embeddings
 - Finished [soundpipe](#) which will run a series of processors on incoming MARS audio files to monitor for blue/fin/humpback presence.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Loaded new RF-DETR model results to [drone.mbari.org](#). Appears to be a much more sensitive model than YOLOv11; some adjustments needed for threshold.
 - Team meeting and OSM poster discussion on kelp coverage ML
 - 902111 - Carbon Flux Ecology
 - OOD (Out of Distribution) exploration with Fernanda.
 - Voxel51 data preparations for Planktivore use
 - Overhead
 - Performance review
- Duane Edgington
 - 901502 - Ocean Soundscape
 - Met with Yanwu. Dolphin vs Orca confusion.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
 - Continued evaluation of testset with RF-Detr detector.
 - Plan to integrate SAHI with RF-Detr inference flow.

- Poster work for OSM meeting.
- Kevin Gomes
 - 200105 - Core Navigation - MDUC
 - Getting the Packard dialed in again after firewall change and networking breaks.
 - 200109 - Core Mooring Data - MDUC
 - Trying to get started by looking through database schema and business logic in SSDS
 - 300057 - Mooring Maintenance
 - Meeting to discuss the change from microwave to Starlink for Mt Toro connection for AIS and Viper radios
 - 300059 - DMO Support - RV David Packard
 - More discussions about CTD GUI and configuration changes
 - 300062 - DMO Support - Doc Ricketts
 - Helping Ben with CTD configuration
 - 706008 - READi-net
 - Working on pulling Brent's PR and building card to test new more stable SD image partitioning and then to try and put puck reader code in same image.
 - 902403 - Expedition DB Modern
 - Met to talk about authentication schemes for API and X-API-Tokens
 - Overhead
 - Migrated all Confluence content to static websites, de-coupled from Crowd which was the integration with our active directory system so we could decommission the SQL server in the DMZ (dione).
 - Performance reviews
- Andy Hamilton
- Kent Headley
 - 701147 - MARS O&M
 - laying some groundwork for fan monitor software in connection with the MARS node cooling updates. If required, the software would detect overheating in the event of a fan failure and enable a redundant fan. It's not certain we'll need it if passive heat sinks can provide enough
 - Overhead
 - review meetings, wrap up
- Rich Henthorn
 - 902111 - Carbon Flux Ecology
 - New commands for camera controller to move brush and camera housing around
 - 902401 - Geo-Sense
 - Deployment prep and deployment on Carson
 - Out of Office
 - Feb 3 and 4 - Geo-Sense DAS deployment on Carson
 - March 5 - SINKER deployment on Carson
 - Apr 9 to 13 - Durkin Packard Cruise
 - May 18 to 28 - Vacation
- Akshay Hinduja
 - 901809 - Deep Sea Bioinspiration
 - Tie up meetings with CVision to end first stage
 - Verify and demo deliverables from contractors
 - Found areas for improvements on intermediary outputs to help modularize efforts to pickup from the middle.
 - Asynchronous meetings with BiL team to discuss next steps in March
 - 902204 - Scalable Robotics

- Got localization against MBSystem maps working (!)
 - Good success with 5cm scale maps and 1m scale maps (upscaled using ML sampling methods <https://github.com/Holmes-Alan/PUFM>)
 - Implemented NDT matching, global FPFH search to speed up matching performance.
 - Implemented standalone localizer, which does not use pose graph optimization
 - Added LCM publishing for pose data updates.
 - Improved NDT matching voxelization pre process, which gives better results so far.
- Out of Office
 - Feb 9 -March 9 parental leave
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program
 - Tests to understand substrate leakage in DSL continue
 - Alkalinity:
 - Assemble a low-pressure alkalinity unit with Luke, currently setting up for lab tests
 - ISUS:
 - Discuss new lamp with Gene, mock fit in Solidworks. Arrange a call with Excelitas for more info
 - OSM poster, had to learn all about calibration protocol
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Motor interface board received; attempted to hook up and found some issue with connectors, fixed
 - Out of Office
 - 2/9/26: WFH / dr appointments
- Scott Jensen
 - Out of Office
 - March 23-31 (estimate)
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Prep and deploy first ever Spray2 from MBARI
 - 901805 - Coastal Biogeochemical Sensing Program
 - Bringing up nanoFET2 pcb's
- Chad Kecy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
- Denis Klimov
- Eric Martin
 - 300079 - DMO Support - RV Rachel Carson
 - Telepresence for the DAS deployment this Tuesday & Wednesday
 - 901101 - Seafloor Mapping
 - Keeping on top of ongoing efforts.
 - 902504 - Scalable Semantic Mapping
 - Getting the drawer ready
 - Working with George on planning for the camera triggering
 - 902606 - Low Altitude Survey AUV
 - Met with Kraken 2/3/24. Great deep discussion on their impressive battery operations.
 - Overhead
 - Performance Reviews

- Thom Maughan
 - 300078 - DMO Support - AUV
 - Hyperion Power Supply parts are in (delayed by weather). Parts kitting, assembly documents for handbuild by EETech of a) 24 supply only, then b) qty 3 of complete board. Using Erik's python script to change placement file formatting per Jose's request.
 - Hyperion Environmental board design
 - Various design discussions with Erik
 - 300083 - DMO Support - LRAUV
 - Gemini AI code review of batman firmware. Implemented the suggestion to use fixed point instead of floating point on Cortex-M0.
 - BPC2 BatMan integration test, specifically the discharge test surfaced a couple problems. LRAUV power cable modified for Galene, moving forward, we will make the change on BPC2 connector. Firmware bug affecting 'S', aka stick status command. Found and fixed. New firmware uploaded and test re-started with charge until end of day, then discharge until 'reserve' voltage behaviour is observed.
 - 901217 - Chemical Sensors
 - Working on design of new MMS interface analog and digital boards, aka, MMS2
 - Captured logic analyzer signals of existing FPGA design - very interesting that continuous photodiode read clocking and ADC conversion is happening when the MMS is idle.
 - Manufacturing support, discussions with Ben Davis on MMS board checkout and tuning.
 - 901805 - Coastal Biogeochemical Sensing Program
 - MoSoS v5.2 for nanoFET, working with Jim on git merge to main branch
 - CCS support for Brent Jones who is bringing up his new formfactor nanoFET.
 - 902004 - Planktivore
 - Worked with Paul on Planktivore V2 maintenance. Paul disassembled the housing, found screws had galled. Need to service screws yearly.
 - Removed backup battery, lightened by 480 grams.
 - DMO ASO group is preparing Ahi for deployment next week.
 - Overhead
 - CANON HiPP. Received DeepEdna3 server. Working with IS on install of 61TB drives. Ran into a snag and need to order PCIe U2 cards to mount the drives.
 - Out of Office
 - Vacation Feb 16 to 20
 - OSM Feb 19 to 23
- Mike McCann
 - 901101 - Seafloor Mapping
 - Learning MB-System tools (mbgrdviz, etc.) so that I can advise students working on [mbmesh](#)
 - Reviewing Pull Request for SMDB UI improvements
 - Overhead
 - Migrated [stogs.mbari.org](#) to new VM running in the DMZ
 - Redeployed the dods and search services to new VMs in the DMZ, closing [Issue 22](#)
 - Out of Office
 - 2-5 March: OGC 134th Member Meeting - remote attendance
- Enoch Nicholson
- Tom O'Reilly
- Mike Risi
 - 300059 - DMO Support - RV David Packard

- Working with Cameron on CTD serial port issue
- 901101 - Seafloor Mapping
 - Testing LASS simulation with existing LASS control system
 - Working on LASS control system refactoring
- Out of Office
 - Offsite on Tuesday and Friday
 - January 2, 2026 - vacation
 - January 19, 2026 - January 30, 2026 - vacation
- Paul Roberts
 - 901809 - Deep Sea Bioinspiration
 - OSM2026 preparations
 - Raytrix project support
 - UWA multiview system support
 - 902004 - Planktivore
 - V2A assembly and maintenance
 - 902111 - Carbon Flux Ecology
 - SINKER deployment preparations
 - 902204 - Scalable Robotics
 - Strobe testing
 - DWE camera testing
 - Out of Office
 - Jan 22 - Photonics West (SF)
 - Feb 21 - Feb 27: OSM 2026, Glasgow
 - Feb 28 - Mar 8: Vacation, Scotland
 - Mar 9 - Mar 13: OI 2026, London
 - April 13 - May 1: Falkor (too) Bioinspiration Lab
- Brent Roman
- Carlos Rueda
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Discussions with Kevin G. and Rob on the proper O2 Data Flow issues.
 - 300057 - Mooring Maintenance
 - Working with Kevin G., Jared F., and IS on some serious M1 download issues observed over the last few weeks.
 - 901101 - Seafloor Mapping
 - This week I worked on the Pull Request for the SMDB updates that Jenny has been asking for from the smdb-dev server to the production server (smdb). I am hopeful that Mike will be able to merge this PR with several review updates soon to the production server.
 - I also fixed a bug in the leaflet-measure application for the SMDB dash and pushed that as well to be merged into the production.
 - Today I am fine-tuning various bugs and map views for the Missions, Expeditions and Compilations pages under the Data Menu for the SMDB dash and hope to test and push those as well this week.
 - 902101 - LRAUV Technology Development
 - Waiting on a meeting with Brian K. to discuss exact expectations for my time in 2026 for the LRAUV project.
 - 902111 - Carbon Flux Ecology
 - Reviewed some of the SINKER dash code this week in anticipation of the upcoming March deployment.

- Overhead
 - Met for my annual review with Kevin G.
 - Attended MBARI talks and group meetings.
- Out of Office
 - On-campus 3 days/week (**T, W, TH**). New OFFICE - G106.
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Major [updates to the VARS Annotation build](#).
 - Updates to [Oni](#) and [Vampire-squid](#) to support new features in the VARS Annotation.
 - Update to external embargo SQL for public annotation data.
 - Updates to service monitoring ([prometheus](#) and [grafana](#))
 - Updates to Oni to support the KB Editor app
 - More fixes to external services running in read-only mode.
 - Overhead
 - Working on abstract for [MidSEC](#)
 - Reviewed a number of abstracts for upcoming conferences.
 - Discussion with Sebastián Rodríguez Martínez about adding CompAS images to VARS.
 - Out of Office
 - April 6 - April 24: Vacation
 - Jun 13 - Jun 19: Midwater Science and Engineering Community Conference, Sweden.
- Quinn Shemet
 - 300062 - DMO Support - Doc Ricketts
 - Dockerized pan-tilt sim/test environment
 - 902101 - LRAUV Technology Development
 - Docking homing data analysis
 - BPC2 testing and debug
 - OSM AUV tutorial work
 - IEEE AUV abstracts
 - Overhead
 - Candidate resume review
 - Out of Office
 - Feb 17th - Feb 19th - Vacation
 - Feb 23rd - Feb 28th - OSM, Glasgow
- Alana Sherman
- George Stern
 - 701147 - MARS O&M IV
 - Looked at MARS and some cots heatsink options while bugging UW for solid models
 - 902106 - Niobicon-Based AUV Docking Development
 - On going over the past 2wks
 - Datasheet and docs review of the current powerline modems
 - High frequency magnetic field shielding refresher - nonferrous high conductivity metals really do work best due to eddy currents
 - Began looking at filter design and system layouts
 - Potential comms options for new docking buoy and phy layer cable requirements
 - 902204 - Scalable Robotics
 - Trigger board calibration procedure
 - Tested rolling shutter camera with capacitive discharge strobe light
 - Preparations to get triggering working on ventana drawer
 - Finished assembling 1 strobe light and ran lumen test with Paul

- Previous weeks - finished ESC controller software and developed preliminary hardware integration test plan but tabled because mola is in high demand.
- Reconfigured 2 of the previously assembled but unhoused HSI light electronic stacks to be strobes(higher lumens LEDs/no lenses) and tested new strobe boards Chris nicely assembled
- 902304 - Piscivore Cam
 - Swapping CV28 and CV25 soms on OEM boards and EVK2 to check it works
 - Previous weeks
 - Preliminary fit check to fit the OEM board and cameras into a 2in housing - it fits!
 - Spent far too much time trying to order analog boards from framos; finally on order and may be on the way?
- Justin Tucker
 - Out of Office
 - Fridays through March 2026
- Johann Voigtlander